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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,551	03/17/2004	Yoshihiro Yanagi	2004_0411A	3491
513	7590	12/23/2005	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P.			GHYKA, ALEXANDER G	
2033 K STREET N. W.			ART UNIT	
SUITE 800			PAPER NUMBER	
WASHINGTON, DC 20006-1021			2812	

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EL

<b>Office Action Summary</b>	<b>Application No.</b> 10/801,551	<b>Applicant(s)</b> YANAGI ET AL.	
	<b>Examiner</b> Alexander G. Ghyka	<b>Art Unit</b> 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.  
4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

ALEXANDER GHYKA  
PRIMARY EXAMINER

AU 2812  
*Alex Ghyka*

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of Group I (Claims 1-3 and 6) in the reply filed on October 6, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Therefore, Claims 4-5 are withdrawn from consideration.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Cheng et al (US 6,703,317) or Pan et al (US 2003/0235994).**

The present Claims generally require before performing a plasma processing on the processing-object substrate, subjecting the processing-object substrate to a charge-neutralization-use plasma in a gas composed mainly of inert gas so that charges electrified on the processing-object substrate are neutralized.

Cheng discloses charge neutralizing a wafer using nitrogen gas plasma, and a subsequent plasma enhanced chemical vapor deposition process. See Figures 1-4,

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column 3, lines 1-20; column 4, lines 45-65 and column 6, lines 30-40. Therefore, Claims 1-2 are anticipated by the Cheng reference.

Pan et al disclose charge neutralizing a wafer using a hydrogen gas plasma and a subsequent reactive ion etch (RIE). See Figure 3 and page 4, Claims 1-4. RIE is a plasma process. See page 1, paragraph 4. Therefore, Claims 1-2 are anticipated by the Pan reference.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 3 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al (US 6,703,317) or Pan et al (US 2003/0235994) as applied to claim 1-2 above, and further in view of Misumi et al (US 5,492,862).**

Claims 3 and 6 further require that the top and bottom surfaces of the processing-object substrate are simultaneously subjected to the plasma in the inert gas.

Cheng et al or Pan et al are applied as discussed above.

Cheng et al or Pan et al disclose the presently claimed limitations with the exception of the limitation that the top and bottom surfaces of the wafer are simultaneously subjected to the plasma in the inert gas.

Misumi et al disclose a vacuum charge neutralization method which comprises a rotatable treatment so that the entire surface of the wafer is scanned and uniformly treated with ion beams. See column 1, lines 20-30; column 2, lines 35-50; column 3, lines 10-25 and Figures 1 and 3. Misumi et al also disclose the charge neutralization by treatment with the plasma of an inert gas. See column 5, lines 1-10.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the plasma process of Cheng et al or Pan et al in the apparatus as disclosed by Misumi et al for its known benefit of charge neutralization of a semiconductor wafer. The use of a known apparatus, charge neutralization apparatus as disclosed by Misumi, for its known benefit, charge neutralization in the processes as disclosed by the Cheng et al or Pan et al references, would have been within the level of skill of one of ordinary skill in the art. The use of the apparatus of Misumi in the process of Cheng et al or Pan et al would result in the top and bottom surfaces of the

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wafer being simultaneously subjected to the plasma of the inert gas. Therefore, a *prima facie* case of obviousness is established.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571) 272-1669. The examiner can normally be reached on Monday through Thursday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGG  
December 20, 2005

ALEXANDER GHYKA  
PRIMARY EXAMINER

AU 2812  
